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Sustainable food production by fermentation – proposal for a pragmatic regulatory approach for the use of food cultures

At EU-level, there have been ongoing discussions over the past 15-20 years concerning the classification and regulation of certain uses of food cultures. Food cultures used in fermented products are today unanimously regarded as ingredients, subject to the provisions of the General Food Law regulation (Regulation (EC) No 178/2002). Some Member States advocate for a classification of certain food cultures as food additives under the EU Food Additives Regulation (Regulation (EC) No 1333/2008) when being used in more innovative applications, underlining their functionality such as prolonging the shelf life of certain foods. Some other Member States have gone in the opposite direction and have adopted a more pragmatic approach, abrogating previous rules that required the pre-market approval of food cultures use.

Fermented food products are produced by the interaction of food cultures with raw materials leading to changes in the product itself – for example, food cultures converting milk into yoghurt. Food cultures can also be used in foods without such a clear change in the product matrix. In these cases, fermentation still takes place but is less visible and may be restricted to the surface of the product.

The food culture industry, represented by EFFCA, would like to present a regulatory solution that would secure legal clarity, proportionality, clear consumer information, transparency and safety concerning the use of food cultures that do not lead to a full fermentation of the product (i.e., that do not change the product visibly or entirely). These would include, for example, fish and meat products, ready-to-eat fruits, salads, hamburgers patties, etc. The proposal from EFFCA would at the same time unleash the innovative potential of fermentation technology to contribute to achieving the EU Green Deal and Farm to Fork objectives, in particular preventing food waste and thus reducing the environmental impact of food.

Proposal for a solution: Introduction of a new labeling particular, e.g., “protected by fermentation” and adoption of self/co-regulated industry guidelines on the quality and safety assessment of food cultures.

EFFCA developed self-regulating industry guidelines on how to document the quality and safety of food cultures when fermentation is used to contribute to the safety and quality of foods that do not undergo a full fermentation/transformation process.

To ensure consumers’ information about the use of fermentation technology for the purpose of enhancing the safety and quality of foods (by inducing a limited/surface fermentation), EFFCA

proposes the introduction of a new labelling particular on the final food's labelling with the text: "protected by fermentation". In addition, the ingredient list should mention the use in the food of the "food culture". The introduction of this labelling scheme could be achieved by means of an alteration of Regulation (EU) 1169/2011 either in Annex III as a delegated act or through Annex VI by means of a position statement from the Commission.

Germany and France already (partly) use similar labelling solutions ("Schutzkulturen", "ferments").

Accordingly, the safety and transparency of the use of surface fermentation technology would be achieved through the provisions of the General Food Law Regulation (Regulation (EC) No 178/2002) without requiring the pre-market approval of food cultures used to obtain a surface fermentation. The industry would deem a pre-market approval requirement as disproportionate, creating a major burden on administration and resources of the industry and safety authority, hampering innovation and preventing the achievement of the Green Deal and Farm to Fork objectives - particularly so because these food cultures may just as well be naturally present in/on the food, and/or may have been used for millennia.

Explanation: Fermentation is a natural, biological reaction that occurs on any (non-sterile) food because of the natural presence of bacteria (food cultures)

Fermentation naturally occurs when bacteria/food cultures, omnipresent in and on (non-sterile) foods but also in our surroundings and in and on our bodies, metabolise carbohydrates into acid or alcohol. People have made use of this natural, spontaneous fermentation process for millennia in food preparation, principally to ensure longer shelf-life, food preservation and food safety. In other words, all (perishable, non-sterilized) foods contain a microflora and, consequently, a spontaneous fermentation process will always occur in/on food, even if it cannot necessarily be observed.

Food cultures are not substances with a single, targeted effect on the food matrix. Food cultures are living organisms (typically lactic acid bacteria) that interact with the food matrix through different processes, including competitive exclusion (different strains competing for the substrate). The outcome and efficacy of a fermentation process is, therefore, individual and dependent on factors like the food matrix and the processing environment (e.g., temperature, etc.).

Food cultures are normally consumed as food ingredients. The food culture industry actors collect naturally occurring live bacteria, yeasts or filamentous fungi (moulds), and study, select and evaluate their safety, after which they multiply these food cultures with the objective to place them in and onto food products. This way, targeted use of selected cultures with optimal properties replaces random coincidence, ensuring a higher, stabilized and predictable level of food safety and naturally prolonged shelf life.